

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	14248209	@ad<"19960822"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:13
L2	32393	"711"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L3	726571	software	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L4	542650	hardware	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L5	301	DLAT	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L6	331734	L3 and L4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L7	5490	TLB	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L8	61	L6 and L5	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L9	1571562	target address	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15

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L10	15	L8 and L7	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L11	15	L10 and L9	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L12	2684802	memory protection	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L13	19156	prevent\$4 near3 writ\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L14	13377	L12 and L13	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L15	0	L11 and L14	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:15
L16	37	(kelly near edmund).in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:16
L17	20	(cmelik near robert).in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:16
L18	19	(wing near malcolm).in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:16
L19	49	L16 or L17 or L18	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:16

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L20	0	11 and 19	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/01/07 23:16
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Best 200 shown

1 Cache Memories

Alan Jay Smith

September 1982 **ACM Computing Surveys (CSUR)**, Volume 14 Issue 3

Publisher: ACM Press

Full text available: [pdf\(4.61 MB\)](#)Additional Information: [full citation](#), [references](#), [citations](#),**2 Mondrian memory protection**

Emmett Witchel, Josh Cates, Krste Asanović

October 2002

ACM SIGPLAN Notices , ACM SIGARCH Computer Architecture News , ACM 10th international conference on Architectural support for programming

Issue 10 , 5 , 5

Publisher: ACM Press

Full text available: [pdf\(1.53 MB\)](#)Additional Information: [full citation](#), [abstract](#), [ref](#)

Mondrian memory protection (MMP) is a fine-grained protection scheme that allows multiple processes to have direct access to memory. In contrast to earlier page-based systems, MMP allows arbitrary permissions control at the page level. This implementation adds less than 9% overhead to ...

3 Energy efficient memory systems: Generating physical addresses directly for saving instructions

I. Kadayif, A. Sivasubramaniam, M. Kandemir, G. Kandiraju, G. Chen

November 2002 **Proceedings of the 35th annual ACM/IEEE international symposium on Computer architecture**

Publisher: IEEE Computer Society Press

Full text available: [pdf\(1.26 MB\)](#) [Publisher Site](#)Additional Information: [full citation](#), [abstract](#), [ref](#)

Power consumption and power density for the Translation Lookaside Buffer (TLB) are important factors in cache design as well. This paper embarks on a new philosophy for reducing the number of accesses to the TLB. The overall idea is to keep a translation currently being used in a register and avoid changing it. We propose f ...

4 Architectural support for translation table management in large address space machines

Jerry Huck, Jim Hays

May 1993

ACM SIGARCH Computer Architecture News , Proceedings of the 20th annual international conference on Architectural support for programming

'93, Volume 21 Issue 2

Publisher: ACM Press

Full text available:  pdf(1.34 MB)

Additional Information: [full citation](#), [abstract](#), [ref](#)

Virtual memory page translation tables provide mappings from virtual to physical addresses. When a page does not contain a translation, these tables provide the translation. Approaches to the structure and implementation of these tables range from complete hardware based solutions to complete software based algorithms. The size of the virtual address space used by processes

5 Exokernel: an operating system architecture for application-level resource management



D. R. Engler, M. F. Kaashoek, J. O'Toole

December 1995

ACM SIGOPS Operating Systems Review , Proceedings of the fifteenth ACM SIGOPS symposium

Volume 29 Issue 5

Publisher: ACM Press

Full text available:  pdf(2.16 MB)

Additional Information: [full citation](#), [references](#), [ref](#)

6 Software controlled memory systems: Energy-efficient address translation for virtual memory management



Xiangrong Zhou, Peter Petrov

September 2005

Proceedings of the 3rd IEEE/ACM/IFIP international conference on Hardware/Software Codesign and System Synthesis '05 , Proceedings of the 3rd IEEE/ACM/IFIP international conference on Hardware/Software Codesign and System Synthesis '05

Publisher: ACM Press, IEEE Computer Society

Full text available:  pdf(150.88 KB)  Publisher Site

Additional Information: [full citation](#), [abstract](#), [ref](#)

In this paper we present an application-driven address translation scheme for low-power and real-time systems. We show that power inefficiency and nondeterministic execution times of address-translation mechanisms have significant impact on the performance of memory in embedded processors with low-power and real-time constraints. To address this problem, we propose a new organization, where ...

Keywords: adaptable systems, multi-mode synthesis, reconfigurability

7 Mondrix: memory isolation for linux using mondriaan memory protection



Emmett Witchel, Junghwan Rhee, Krste Asanović

October 2005

ACM SIGART Computer Architecture News , Proceedings of the twentieth ACM SIGART symposium

Volume 39 Issue 5

Publisher: ACM Press

Full text available:  pdf(332.09 KB)

Additional Information: [full citation](#), [abstract](#), [ref](#)

This paper presents the design and an evaluation of Mondrix, a version of the Linux kernel with hardware and software that provides efficient fine-grained memory protection between multiple memory regions. It uses a combination of hardware and software to enforce isolation between kernel modules which helps detect bugs, limits their damage, and isolates them from each other. This is done by exposing two kernel memory protection mechanisms (MPMs) to user space ...

Keywords: fine-grained memory protection

8 Recency-based TLB preloading



Ashley Sausbury, Fredrik Dahlgren, Per Stenström

May 2000

ACM SIGARCH Computer Architecture News , Proceedings of the 27th ACM SIGARCH symposium

'00, Volume 28 Issue 2

Publisher: ACM Press

Full text available:  pdf(651.05 KB)

Additional Information: [full citation](#), [abstract](#), [ref](#)

Caching and other latency tolerating techniques have been quite successful in maintaining high performance in modern microprocessors. However, TLB misses have become a serious bottleneck as working sets are growing beyond the capacity of the TLB. In this paper, we present results for traditional next-page TLB preloading techniques. We show that they can significantly reduce TLB miss latency by using preloading techniques. We present results for traditional next-page TLB preloading techniques. We show that they can significantly reduce TLB miss latency by using preloading techniques.

9 Disco: running commodity operating systems on scalable multiprocessors

 Edouard Bugnion, Scott Devine, Kinshuk Govil, Mendel Rosenblum
November 1997 **ACM Transactions on Computer Systems (TOCS)**, Volume 15 Issue 4

Publisher: ACM Press

Full text available:  pdf(400.76 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

In this article we examine the problem of extending modern operating systems to run efficiently implementation effort. Our approach brings back an idea popular in the 1970s: virtual machine operating systems on a scalable multiprocessor. This solution addresses many of the challenges approach with a prototy ...

Keywords: scalable multiprocessors, virtual machines

10 Hardware support for fast capability-based addressing

 Nicholas P. Carter, Stephen W. Keckler, William J. Dally
November 1994 **ACM SIGPLAN Notices , ACM SIGOPS Operating Systems Review , Proceedings of the conference on support for programming languages and operating systems ASPLOS-VI**,

Publisher: ACM Press

Full text available:  pdf(1.07 MB)

Additional Information: [full citation](#), [abstract](#), [references](#)

Traditional methods of providing protection in memory systems do so at the cost of increased complexity of permissions for processes. With the advent of computers that supported cycle-by-cycle multithreaded context switch are unacceptable, but protecting unrelated processes from each other is still necessary environments. This pap ...

11 Fast detection of communication patterns in distributed executions

Thomas Kunz, Michiel F. H. Seuren

November 1997 **Proceedings of the 1997 conference of the Centre for Advanced Studies**

Publisher: IBM Press

Full text available:  pdf(4.21 MB)

Additional Information: [full citation](#), [abstract](#), [references](#)

Understanding distributed applications is a tedious and difficult task. Visualizations based on pr of the execution of the application. The visualization tool we use is Poet, an event tracer develop very complex and do not provide the user with the desired overview of the application. In our e: commun ...

12 Disco: running commodity operating systems on scalable multiprocessors

 Edouard Bugnion, Scott Devine, Mendel Rosenblum
October 1997 **ACM SIGOPS Operating Systems Review , Proceedings of the sixteenth ACM SIGART Computer Architecture News , Proceedings of the 23rd annual international conference on Computer architecture**, Volume 31 Issue 5

Publisher: ACM Press

Full text available:  pdf(2.30 MB)

Additional Information: [full citation](#), [references](#), [cited by](#)

13 Decoupled hardware support for distributed shared memory

 Steven K. Reinhardt, Robert W. Pfile, David A. Wood
May 1996 **ACM SIGARCH Computer Architecture News , Proceedings of the 23rd annual international conference on Computer architecture**, Volume 24 Issue 2

Publisher: ACM Press

Full text available:  pdf(1.47 MB)

Additional Information: [full citation](#), [abstract](#), [references](#)

This paper investigates hardware support for fine-grain distributed shared memory (DSM) in net cost relative to dedicated DSM systems, we decouple the functional hardware components of DS two decoupled systems, Typhoon-0 and Typhoon-1. Typhoon-0 uses an off-the-shelf protocol pr

only DSM-specific hard ...

14 Shade: a fast instruction-set simulator for execution profiling

 Bob Cmelik, David Keppel

May 1994 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the : modeling of computer systems SIGMETRICS '94**, Volume 22 Issue 1

Publisher: ACM Press

Full text available:  pdf(1.28 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [incubator](#)

Tracing tools are used widely to help analyze, design, and tune both hardware and software systems. This paper presents a fast instruction-set simulation system for execution profiling. It provides efficient instruction-set simulation with a flexible, extensible trace generation capability. Efficient tracing is achieved by using a fast trace generation mechanism that can trace the application program. The user may control the extent of tracing in a variety of ways. The system can collect traces of up to several gigabytes of memory access and trace collected ...

15 Embedded systems: Arithmetic-based address translation for energy-efficient virtual memory

 Xiangrong Zhou, Peter Petrov

September 2005 **Proceedings of the 18th annual symposium on Integrated circuits and systems**

Publisher: ACM Press

Full text available:  pdf(267.86 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [incubator](#)

In this paper, we present an arithmetic-based address translation scheme for low-power and real-time embedded systems. The proposed scheme provides a simple and efficient way to support real-time purpose virtual memory support comes with its fundamental disadvantages of excessive power consumption and performance overhead. These disadvantages have been the main reason for not adopting virtual memory and its associated benefits in embedded systems. To ...

16 Virtual memory primitives for user programs

 Andrew W. Appel, Kai Li

April 1991 **ACM SIGPLAN Notices , ACM SIGARCH Computer Architecture News , ACM SIGART fourth international conference on Architectural support for programming environments**

25 Issue 4 , 2 , Special Issue

Publisher: ACM Press

Full text available:  pdf(1.37 MB)

Additional Information: [full citation](#), [references](#), [citations](#), [incubator](#)

17 The M-Machine multicomputer

Marco Fillo, Stephen W. Keckler, William J. Dally, Nicholas P. Carter, Andrew Chang, Yevgeny Gurevich, Michael S. Muller December 1995 **Proceedings of the 28th annual international symposium on Microarchitecture**

Publisher: IEEE Computer Society Press

Full text available:  pdf(1.29 MB)

Additional Information: [full citation](#), [references](#), [citations](#), [incubator](#)

18 Multigrain shared memory

 Donald Yeung, John Kubiatowicz, Anant Agarwal

May 2000 **ACM Transactions on Computer Systems (TOCS)**, Volume 18 Issue 2

Publisher: ACM Press

Full text available:  pdf(369.18 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [incubator](#)

Parallel workstations, each comprising tens of processors based on shared memory, promise cost-effective computing. This paper presents a new approach to building such small- to medium-scale shared-memory multiprocessors through software over a local area network. The authors introduce the concept of these systems Distributed Shared-memory MultiProcessors (DSMPs). This article introduces the basic concepts of DSMPs and their implementation. The authors also discuss the sharing, cache coherency, and consistency issues in DSMPs. They present a case study of a DSMP system and show how it can be used for distributed shared-memory multiprocessors. The authors conclude with some future directions for research in this area.

Keywords: distributed memory, symmetric multiprocessors, system of systems

19 The interaction of architecture and operating system design

 Thomas E. Anderson, Henry M. Levy, Brian N. Bershad, Edward D. Lazowska

April 1991

ACM SIGPLAN Notices , ACM SIGARCH Computer Architecture News , ACM fourth international conference on Architectural support for programming
25 Issue 4 , 2 , Special Issue

Publisher: ACM Press

Full text available:  pdf(1.60 MB)

Additional Information: [full citation](#), [references](#), [indicators](#)

20 The effects of virtually addressed caches on virtual memory design and performance

 Jon Inouye, Ravindranath Konuru, Jonathan Walpole, Bart Sears

October 1992

ACM SIGOPS Operating Systems Review, Volume 26 Issue 4

Publisher: ACM Press

Full text available:  pdf(1.32 MB)

Additional Information: [full citation](#), [abstract](#), [indicators](#)

Recent times have witnessed rapid advances in microprocessor technology resulting in an order of magnitude improvement in performance. These developments in hardware have been paralleled by several prominent trends in operating systems research, including micro-kernels. However, operating system performance has not kept pace with that of the underlying hardware. This paper discusses how cache management can help enhance processor performance can help ...

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